

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N9/58

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, PAJ, EMBL, Sequence Search, EMBASE, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| X | DATABASE GSP DERWENT; 19 May 1999 (1999-05-19), NOVO-NORDISK AS.: "Nocardiosis sp. proteolytic protein." XP002298820 Database accession no. AAW92997 the whole document | 1-3,8,9, 16,21 |
| X | -& DATABASE GSN DERWENT; 19 May 1999 (1999-05-19), NOVO-NORDISK AS.: "Nocardiosis sp. proteolytic protein cDNA." XP002298821 Database accession no. AAX22316 the whole document | 10-13 |
| X | & DK 1 396 A (NOVONORDISK AS) 9 January 1996 (1996-01-09) ----- -/- | 1-3,8-13 |

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the International filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the International filing date but later than the priority date claimed

T later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the international search

5 October 2004

Date of mailing of the International search report

21/10/2004

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| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|--|--|-----------------------|
| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| X | WO 01/58276 A (HOFFMANN LA ROCHE ; OESTERGAARD PETER RAHBK (DK); SJOEHOLM CARSTEN (D) 16 August 2001 (2001-08-16) SEQ ID NO's 1 & 2 examples 1,2,6 | 1-3,8,9, 16-18,20 |
| X | MITSUIKI S ET AL: "Purification and some properties of a keratinolytic enzyme from an alkaliphilic Nocardiosis sp. TOA-1" BIOSCIENCE BIOTECHNOLOGY BIOCHEMISTRY, JAPAN SOC. FOR BIOSCIENCE, BIOTECHNOLOGY AND AGROCHEM. TOKYO, JP, vol. 66, no. 1, January 2002 (2002-01), pages 164-167, XP002296335 ISSN: 0916-8451 page 164 - page 166; figure 2 | 1-3,8,9, 16 |
| P,X | -& MITSUIKI SHINJI ET AL: "Molecular characterization of a keratinolytic enzyme from an alkaliphilic Nocardiosis sp. TOA-1" ENZYME AND MICROBIAL TECHNOLOGY, vol. 34, no. 5, 2 April 2004 (2004-04-02), pages 482-489, XP002298817 ISSN: 0141-0229 | 1-3,8,9, 16 |
| X | TSUJIBO H ET AL: "AMINO ACID COMPOSITIONS AND PARTIAL SEQUENCES OF TWO TYPES OF ALKALINE SERINE PROTEASES FROM NOCARDIOPSIS DASSONVILLEI SUBSP. PRASINA OPC.210" AGRICULTURAL AND BIOLOGICAL CHEMISTRY, JAPAN SOC. FOR BIOSCIENCE, BIOTECHNOLOGY AND AGROCHEM. TOKYO, JP, vol. 54, no. 8, 1990, pages 2177-2179, XP001189697 ISSN: 0002-1369 page 2177; figures 1,2 | 1-3,8,9, 16 |
| X | DIXIT V S ET AL: "Comparative characterization of two serine endopeptidases from Nocardiosis sp. NCIM 5124" BBA - GENERAL SUBJECTS, ELSEVIER SCIENCE PUBLISHERS, NL, vol. 1523, no. 2-3, 18 October 2000 (2000-10-18), pages 261-268, XP004275897 ISSN: 0304-4165 page 262 - page 263; figures 2,5 | 1-3,8,16 |
| | -/- | |

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| A | TAKAHASHI MASAKAZU ET AL: "Improved autoproducting efficiency of mutant subtilisins E with altered specificity by engineering of the pro-region" JOURNAL OF BIOCHEMISTRY (TOKYO), vol. 130, no. 1, July 2001 (2001-07), pages 99-106, XP009037390 ISSN: 0021-924X the whole document | |
| A | YAMASHIRO K ET AL: "MOLECULAR CLONING OF A NOVEL TRYPSIN-LIKE SERINE PROTEASE(NEUROSIN)PREFERENTIALLY EXPRESSED IN BRAIN" BIOCHIMICA ET BIOPHYSICA ACTA, AMSTERDAM, NL, vol. 1350, 1997, pages 11-14, XP001056162 ISSN: 0006-3002 the whole document | |
| A | TANG BING ET AL: "General function of N-terminal propeptide on assisting protein folding and inhibiting catalytic activity based on observations with a chimeric thermolysin-like protease." BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, vol. 301, no. 4, 21 February 2003 (2003-02-21), pages 1093-1098, XP002298818 ISSN: 0006-291X the whole document | |
| A | LAO GUIFANG ET AL: "Cloning, sequencing, and expression of a Thermomonospora fusca protease gene in Streptomyces lividans" APPLIED AND ENVIRONMENTAL MICROBIOLOGY, vol. 62, no. 11, 1996, pages 4256-4259, XP002285856 ISSN: 0099-2240 the whole document | |
| P,X | JP 2003 284571 A (TOTO LTD; DAIWA KASEI KK) 7 October 2003 (2003-10-07) SEQ ID NO's 1 & 2 the whole document | 1-3,8,9, 16,21 |
| E | WO 2004/072221 A (DE MARIA LEONARDO ; NOVOZYMES AS (DK); OESTERGAARD PETER RAHBK (DK)) 26 August 2004 (2004-08-26) SEQ ID NO's 5-12claims 11-24 | 1-3,8-21 |
| E | WO 2004/072279 A (LAN TANG ; LIU YE (CN); WU WENPING (CN); DE MARIA LEONARDO (DK); PONTO) 26 August 2004 (2004-08-26) SEQ ID NO's: 25 & 26claims 14-26 | 1-3,8-21 |

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|---|---------------------|----------------------------|---------------------|
| DK 1396 | A | 09-01-1996 | NONE | |
| WO 0158276 | A | 16-08-2001 | AU 3544601 A | 20-08-2001 |
| | | | AU 4236601 A | 20-08-2001 |
| | | | BR 0108164 A | 21-01-2003 |
| | | | BR 0108165 A | 25-02-2003 |
| | | | CA 2395266 A1 | 16-08-2001 |
| | | | CA 2395343 A1 | 16-08-2001 |
| | | | CN 1398161 T | 19-02-2003 |
| | | | CN 1398162 T | 19-02-2003 |
| | | | WO 0158275 A2 | 16-08-2001 |
| | | | WO 0158276 A2 | 16-08-2001 |
| | | | EP 1257175 A2 | 20-11-2002 |
| | | | EP 1257176 A2 | 20-11-2002 |
| | | | JP 2003521907 T | 22-07-2003 |
| | | | JP 2003521908 T | 22-07-2003 |
| | | | PL 357638 A1 | 26-07-2004 |
| | | | PL 357668 A1 | 26-07-2004 |
| | | | US 2004161448 A1 | 19-08-2004 |
| | | | US 2001026797 A1 | 04-10-2001 |
| | | | US 2003021774 A1 | 30-01-2003 |
| JP 2003284571 | A | 07-10-2003 | NONE | |
| WO 2004072221 | A | 26-08-2004 | WO 2004072221 A2 | 26-08-2004 |
| | | | WO 2004072279 A2 | 26-08-2004 |
| WO 2004072279 | A | 26-08-2004 | WO 2004072221 A2 | 26-08-2004 |
| | | | WO 2004072279 A2 | 26-08-2004 |